

**WHAT IS CLAIMED IS:**

1. A catastrophic event-survivable video recording system, comprising:

5 a video data compression unit having at least a first output, said first output comprising compressed digital video data;

10 a video data recording unit having at least a first input in signal communication with said first output from said video data compression unit, said video data recording unit being capable of recording compressed digital video data in catastrophic event-survivable form; and

15 a video data interface in signal communication between said video compressor first output and said video data recording unit first input, said video data interface being capable of converting said compressed video data of said video data compression unit first output to a compressed video data signal that is suitable for recording by said video data recording unit as a signal input to said video data recording unit first input.

20 2. The video data recording system of claim 1, wherein said video data recording unit is a conventional flight data recording unit.

25 3. The video recording system of claim 1, wherein said video data compression unit further comprises at least a first input, said first input comprising analog video data, and wherein said video data compression unit is capable of converting said analog video data to said compressed digital video of said video data compression unit first output.

30

4. The video recording system of claim 3, wherein said video data interface is capable of converting said compressed video data of said video data compression unit first output to compressed video data output having a serial data and clock stream generated at a rate of about 256 Kbps; and wherein said video data recording unit is  
5 capable of receiving and recording said compressed video data output having a serial data and clock stream generated at a rate of about 256 Kbps.

5. The video recording system of claim 1, wherein said video data compression unit  
10 produces said compressed digital video data first output at a variable rate.

6. The video recording system of claim 1, further comprising at least one video camera, said video camera having an output comprising analog video data; and wherein  
15 said video cameral output is in signal communication with said video compression unit first input.

7. The video recording system of claim 1, wherein said video data recording unit has  
20 at least a first output, said first output comprising compressed digital video playback data, said video data recording unit being capable of playing back said compressed digital video data that is recorded in catastrophic event-survivable form; wherein said video data compression unit has a second input in signal communication with said first output from  
25 said video data recording unit and has a second output comprising analog video playback data, said video data compression unit being capable of converting compressed digital video data to said analog video playback data; and wherein said video data interface is capable of converting said compressed digital video playback data of said video data recording unit first output to a compressed digital video data signal that is suitable for  
30 input to said second input of said video data compression unit and conversion by said video data compression unit to said analog video playback data of said video data compression unit second output.

8. The video recording system of claim 1, wherein said system is configured for installation on a vehicle.

5

9. The video recording system of claim 1, wherein said system is configured for installation on an aircraft.

10

10. The video recording system of claim 1, wherein said system is configured for installation on a land-based or sea-based facility.

15

11. The video recording system of claim 8, wherein said video data interface is capable of converting said compressed video data of said video data compression unit first output to compressed video data having a serial data and clock stream generated at a rate of from about 250 Kbps to about 500 Kbps.

20

12. The video recording system of claim 11, wherein said video data recording unit is capable of saving at least about 30 minutes of compressed digital video data recorded prior to a catastrophic event.

25

13. The video recording system of claim 11, further comprising at least one video camera, said video camera having an output comprising analog video data; and wherein said video camera output is in signal communication with said video compression unit first input.

30

14. The video recording system of claim 11, wherein said system is configured for installation on an aircraft.

5 15. A catastrophic event-survivable video recording system, comprising:

a video data compression unit having at least a first output, said first output comprising compressed digital video data;

10 a video data recording unit having at least a first input in signal communication with said first output from said video data compression unit, said video data recording unit having at least a recording mode in which it is capable of recording compressed digital video data in catastrophic event-survivable form;

15 a video data interface in signal communication between said video compressor first output and said video data recording unit first input, said video data interface having at least a recording mode in which it is capable of converting said compressed video data of said video data compression unit first output to a compressed video data signal that is suitable for recording by said video data recording unit as a signal input to said video data recording unit first input; and

20 at least one video camera, said video camera having an output comprising video data; and wherein said video camera output is in signal communication with said video compression unit first input;

25 wherein said video data interface is capable of converting said compressed video data of said video data compression unit first output to compressed video data having a serial data and clock stream generated at a rate of

30 from about 250 Kbps to about 350 Kbps.

16. The video recording system of claim 15, wherein said system is configured for installation on an aircraft.

5

17. The video recording system of claim 16, wherein said video data recording unit is a conventional flight data recording unit, and wherein said video data recording unit is capable of saving at least about 30 minutes of compressed digital video data recorded prior to a catastrophic event.

10

18. The video recording system of claim 16, wherein said video camera has an output comprising analog video data; and wherein said video data compression unit is capable of converting said analog video data to said compressed digital video of said video data compression unit first output.

15

19. The video recording system of claim 18, wherein said video data interface is capable of converting said compressed video data of said video data compression unit first output to compressed video data output having a serial data and clock stream generated at a rate of about 256 Kbps; and wherein said video data recording unit is capable of receiving and recording said compressed video data output having a serial data and clock stream generated at a rate of about 256 Kbps.

20

25

20. The video recording system of claim 18, wherein said video data compression unit produces said compressed digital video data first output at a variable rate.

30

21. The video recording system of claim 16, wherein said video data recording unit has at least a first output, said first output comprising compressed digital video playback data, said video data recording unit having a playback mode in which it is capable of playing back said compressed digital video data that is recorded in catastrophic event-survivable form; wherein said video data compression unit has a second input in signal communication with said first output from said video data recording unit and has a second output comprising video playback data, said video data compression unit having a playback mode in which it is capable of converting compressed digital video data to said video playback data; and wherein said video data interface is capable of converting said compressed digital video playback data of said video data recording unit first output to a compressed digital video data signal that is suitable for input to said second input of said video data compression unit and conversion by said video data compression unit to said video playback data of said video data compression unit second output.

22. The video recording system of claim 16, wherein said video camera is configured for mounting on an exterior surface of said aircraft, in the cockpit of said aircraft, in the passenger cabin of said aircraft, or in the cargo hold of said aircraft.

23. The video recording system of claim 16, further comprising a video processor and a cockpit control unit;

wherein said video processor has a control input, a video data input and a video data output;

wherein said cockpit control unit has a control output, video data input and video data output;

wherein said video processor video data input is in signal communication with an analog video data output of said video compression unit;

wherein said video processor video data output is in signal communication with  
said video data input of said cockpit control unit;

5 wherein said video processor control input is in signal communication with said  
cockpit control unit control output;

wherein said cockpit control unit video output is in signal communication with at  
least one video display configured to be used or mounted within said  
10 aircraft; and

wherein said cockpit control unit is capable of controlling said video processor  
video data output to said video display.

15 24. The video recording system of claim 21, further comprising a cockpit control unit;

wherein said cockpit control unit has a control output that is in signal  
communication with a control input of said video data compression unit,  
20 and wherein said cockpit control unit has a control output that is in signal  
communication with a control input of said video data recording unit;

25 wherein said video data compression unit second output is in signal  
communication with at least one video display configured to be used or  
mounted within said aircraft; and

wherein said cockpit control unit is capable of controlling said recording and  
30 playback modes of said video compression unit and said video data  
recording unit so as to control recording of said video data from said video

camera by said video data recording unit, to control display of said video playback data by said video display, or a combination thereof.

5        25.    The video recording system of claim 15, wherein said system is configured for installation on an aircraft; and further comprising a cockpit control unit, said cockpit control unit having a control output that is in signal communication with a control input of said video data compression unit and a control output that is in signal communication with a control input of said video data recording unit; and

10

          wherein said video data compression unit second output is in signal communication with at least one video display configured to be used or mounted within said aircraft;

15

          wherein said video camera has an output comprising analog video data, and is configured for is mounting on an exterior surface of said aircraft, in the cockpit of said aircraft, in the passenger cabin of said aircraft, or in the cargo hold of said aircraft;

20

          wherein said video data recording unit is a conventional flight data recording unit capable of saving at least about 30 minutes of compressed digital video data recorded prior to a catastrophic event;

25

          wherein said video data compression unit is capable of converting said analog video data to said compressed digital video of said video data compression unit first output;

30

          wherein said video data interface is capable of converting said compressed video data of said video data compression unit first output to compressed video data output having a serial data and clock stream generated at a rate of about 256 Kbps;



wherein said video data recording unit is capable of receiving and recording said compressed video data output having a serial data and clock stream generated at a rate of about 256 Kbps;

5

wherein said video data recording unit has at least a first output, said first output comprising compressed digital video playback data, said video data recording unit having a playback mode in which it is capable of playing back said compressed digital video data that is recorded in catastrophic event-survivable form;

10

wherein said video data compression unit has a second input in signal communication with said first output from said video data recording unit and has a second output comprising analog video playback data, said video data compression unit having a playback mode in which it is capable of converting compressed digital video data to said analog video playback data;

15

wherein said video data interface is capable of converting said compressed digital video playback data of said video data recording unit first output to a compressed digital video data signal that is suitable for input to said second input of said video data compression unit and conversion by said video data compression unit to said analog video playback data of said video data compression unit second output; and

20

25

wherein said cockpit control unit is capable of controlling said recording and playback modes of said video compression unit and said video data recording unit so as to control recording of said analog video data from said video camera by said video data recording unit, to control display of said analog video playback data by said video display, or a combination thereof.

30

26. A method of recording raw video data onto a catastrophic event-survivable video recording unit, comprising:

5

compressing said raw video data to form compressed digital video data; and

converting said compressed digital video data to a compressed video data signal that is suitable for recording by a video data recording unit; and

10

recording said data on a video data recording unit in catastrophic event-survivable form.

15

27. The method of claim 26, wherein said raw video data comprises analog video data generated by at least one video camera; wherein said compressing further comprises converting said analog video data to said compressed digital video data; wherein said compressed digital video data has a serial data and clock stream generated at a rate of from about 250 Kbps to about 500 Kbps; wherein said raw video data generation, compression and recording occurs on an aircraft; and wherein said video data recording unit is a conventional flight data recording unit capable of saving at least about 30 minutes of compressed digital video data recorded prior to a catastrophic event.

20